

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Floyd Backes

Application No.: 10/780,798

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Title: Distributed Protocol for Use in a Wireless
Network

Attorney Docket No.: 160-041

Group Art Unit: 2617

Examiner: Holliday

Mail Stop Appeal Brief-Patents

Commissioner for Patents

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APPELLANT'S BRIEF PURSUANT TO 37 C.F.R. § 1.192

This Appellant's brief is hereby submitted in accordance with a Notice of Appeal
filed contemporaneously with this Brief.

I. Real Party in Interest

The real party in interest is Autocell Laboratories, Inc.

II. Related Appeals and Interferences

Appellants are not aware of any appeals or interferences that are related to the present case.

III. Status of the Claims

Claims 1-3 are pending in this application. Claims 1-2 are rejected and claim 3 is cancelled. This is an appeal of the decision by the Examiner dated January 2, 2008, finally rejecting claims 1-2. None of the claims have been allowed. The rejection of claim 1 is the subject of this appeal.

IV. Status of Amendments

All amendments have been entered.

V. Summary of Claimed Subject Matter

The subject matter of claims 1-2 is a radio control protocol for use by devices in a wireless communications environment wherein multiple channels are available for communication. The protocol includes channel claim messages, presence announce messages, and for executing an association auction, bid and accept messages.

Support for the claim messages is in the specification at page 19, which describes that an access point advertises its intention to use a selected channel by periodically transmitting claim messages in a claiming period.

Support for the presence announce messages is in the specification at pages 28-29, which describe that once the access point is running on a channel, it conveys a TP_backoff parameter in announce messages. The TP_backoff value provides an indication of how far the sending access point has turned its transmit radio down. Further, the TP_backoff value is used by other access points to determine their own TP_backoff values, and a station that is associated to the access point can adopt the TP_backoff value to adjust its radio power.

Support for the auction bid and accept messages is in the specification at pages 41-43, which describe that the purpose of the auction is to distribute the stations across the access points in a manner that enhances performance by reducing RF footprints and avoiding overload of individual access points. In accordance with the embodiment described on page 41, a station “will send a Bid message to an AP that is “better” than the STA’s current AP, where better means that the AP has a lower biased distance.” Further, as described on page 42, the access point “selects the bid entries with the highest biased distance delta values, up to acceptsPerAuction entries, and sends a DRCP Accept message to each of the STAs 16 corresponding to those entries (step 360).”

VI. Grounds of Rejection to be Reviewed on Appeal

A. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kallio (US 2004/0014422 A1) in view of Nakamura (US 6,157,626) in view of Zhang (US 2002/0145968 A1) in view of Feder (US 6,522,881 B1).

VII. Argument

A. The cited combination fails to disclose transmission of an association *bid message* from a mobile wireless terminal device to a particular fixed location device to request service via the particular fixed location device, wherein the decision to send the bid message is based at least in-part on an indication that the receiving device is capable of providing better service as a function of magnitude of *intentional transmitter power attenuation by the particular fixed location device*

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Appellants assert that the cited combination fails to disclose or suggest the claimed limitation of “transmission of an association bid message from a mobile wireless terminal

device to a particular fixed location device, the bid message being a request to communicate in the wireless communications environment via the particular fixed location device, and wherein a decision to send a bid message is based at least in-part on an indication that the receiving device is capable of providing better service as a function of magnitude of intentional transmitter power attenuation by the particular fixed location device.”

The Examiner asserts that Nakamura teaches transmission of a *bid message* from a mobile wireless device to a fixed-location device where the fixed-location device is calculated to be capable of providing best service (col. 5, line 48 through col. 6, line 5), and that Zhang teaches that best service is a function of *power attenuation of the transmitter of the fixed-location device* (paragraph 0008). As will be shown, neither reference actually discloses the portion of the claim limitation against which it is cited.

Generally, transmission power is attenuated in two different ways: *over-the-air* and *by the transmitter*. *Over-the-air* attenuation of transmission power includes attenuation as a function of distance from the transmitter. *Over-the-air* transmission attenuation also includes attenuation by obstacles between the transmitter and receiver. Short of moving the transmitter and receiver closer together and removing obstacles, *over-the-air* transmission power attenuation is a natural condition that cannot be changed and is not an intentional action taken to accomplish any network management goal. Intentional transmission power attenuation *by the transmitter* is used to reduce RF footprint and thereby decrease the chance of interference with other devices. In other words, the amount of

electrical energy that a wireless device puts into a transmitter to cause a signal to be transmitted can be intentionally reduced in order to transmit a weaker signal, i.e., before the signal ever reaches the air. However, intentional transmission power attenuation *by the transmitter* complicates evaluation of fixed-location wireless devices.

In a wireless environment where a fixed-location device reduces its own transmit power in order to reduce RF footprint, it is difficult for a mobile device to evaluate that fixed-location device. When that fixed-location device is operating at full power the mobile device can generally evaluate the fixed-location device based on received signal strength and other factors, as has been done in the art for some time. However, when the fixed-location device is operating at a lowered transmit power, it will appear to be a poor candidate for association because of that lowered signal strength.¹ This is a problem because that fixed-location device may actually be a very good candidate based on ability to operate at higher power, e.g., since the fixed-location device is only powered-down because no mobile devices currently require higher transmission power from the fixed-location device. It would therefore be useful for mobile devices to be able to quickly and efficiently determine whether a fixed-location device can increase power, and by how much.

In the passage of Nakamura cited by the Examiner as disclosing transmission of a bid message from a mobile wireless device to a fixed-location device where the fixed-location device is calculated to be capable of providing best service, Nakamura states that cell judgment unit 38 judges a cell of a base

¹ Note that attenuation of transmit power by the access point is NOT the path loss.

station and “notifies the read out perch channel spread code identification number to the control unit 35 as a judgment result,”² following which “the control unit 35 then carries out the subsequent control based on the cell judgment result by regarding a cell of a base station which transmitted the perch channel corresponding to the notified perch channel spread code identification number as the located cell.”³ Because the control unit carries out subsequent control based on the cell judgment result by regarding the cell as the located cell, it is clear that this is not a bid message. In particular, the cell selection decision made by Nakamura’s mobile device is not merely a request, but is a command. In contrast, a bid message is merely a request to become associated with a fixed-location device.⁴ Such a request is not automatically granted, but is subjected to a selection process.⁵ It should be noted that the use of a bid rather than a command is desirable because the bid/selection auction helps dampen excessive migration of mobile wireless devices between fixed-location devices. Because Nakamura fails to disclose a bid message, the reference fails to disclose the feature against which it is cited.

In the passage of Zhang cited by the Examiner as disclosing that best service is a function of *power attenuation of the transmitter of the fixed-location device*, what is actually described is modification of transmit power by the mobile station in response to a command from the fixed-location device. Note the

² Column 5, lines 62-67

³ Column 6, lines 1-5

⁴ As defined at page 44, lines 15-19, “the STA receives and processes DRCP Announcements from all APs that are operating within its range on any of its supported channels. It evaluates the received power and loading information from the Announce messages and if it finds an AP to which it would be more optimally associated than its current AP, the STA **makes a bid to move** to that AP.” (emphasis added)

⁵ Page 42, lines 9-14

description of “sending a command to a mobile station over a broadcast channel to increase or decrease transmitting power.” Since Zhang’s mobile station is changing transmit power, this clearly has nothing to do with a mobile station evaluating a fixed-location device based on *reduced transmit power by the fixed-location device*. Further, even if Zhang described reduction of transmit power by the fixed-location device rather than the mobile device, there is no suggestion of evaluating which device is best based on the power attenuation.

For the reasons stated above, it will be appreciated that the cited combination fails to disclose a bid message, and further fails to disclose determining where to send the bid message based at least in-part on service quality as a function of magnitude of intentional transmitter power attenuation by the particular fixed location device.

VIII. Conclusion

Appellants submit therefore that the rejections of the present claims under 35 U.S.C. 103 are improper for at least the reasons set forth above. Appellants accordingly request that the rejections be withdrawn and the case put forward for allowance.

Respectfully submitted,

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Appendix A - Claims

1. (previously presented) A radio control protocol for use by devices in a wireless communications environment wherein multiple channels are available for communication, comprising:

transmission of channel claim messages by ones of a plurality of fixed location wireless devices operable to provide network access, each channel claim message being indicative of an intent to utilize a channel for communications with associated mobile wireless terminal devices at some subsequent point in time, wherein each fixed location device uses the claim messages it sends and receives to select a channel on which to communicate;

transmission of presence announce messages by the fixed location devices, the announce messages being indicative of presence of the transmitting device, magnitude of intentional transmitter power attenuation by the transmitting device, and protocol capability of the transmitting device; and

an association auction including:

transmission of an association bid message from a mobile wireless terminal device to a particular fixed location device, the bid message being a request to communicate in the wireless communications environment via the particular fixed location device, and wherein a decision to send a bid message is based at least in-part on an indication that the receiving device is capable of providing better service as a function of magnitude of intentional transmitter power attenuation by the particular fixed location device; and

transmission of an accept message by the particular fixed location device in response to the bid message, the accept message indicating that the particular fixed location device will allow the wireless terminal device which transmitted the bid message to communicate in the wireless communications environment via the particular fixed location device, and wherein the particular fixed location device does not send an accept message to the wireless terminal device which transmitted the bid message if the particular fixed location device determines to not accept the request to associate.

2. (previously presented) The protocol of claim 1 further comprising:

exchange of registration request messages between devices, wherein a sending device sends a registration request message to a receiving device to indicate that the sending device desires to communicate in the wireless communications environment via the receiving device using the radio control protocol;

exchange of registration acknowledge messages between wireless devices, wherein a sending device sends a registration acknowledge message to a receiving device in response to a registration request message, to indicate that the sending device understands that the receiving device will communicate in the wireless communications environment using the radio control protocol.

3. (cancelled)

Appendix B - Evidence Submitted

None.

Appendix C - Related Proceedings

None.